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Abstract

A study involving 327 crossbred sows was conducted to determine whether providing supplemental light in farrowing rooms would influence litter weight, number of pigs weaned, piglet survival rate, and subsequent rebreeding performance of sows exposed to 16 hr supplemental light/day during lactation. Litter weight was increased 7.7 lbs or .85 lb per pig weaned. More sows exposed to 16 hr light (83%) were mated by 5 days after weaning than were control sows (68%).; Swine Day, Manhattan, KS, November 11, 1982

Keywords

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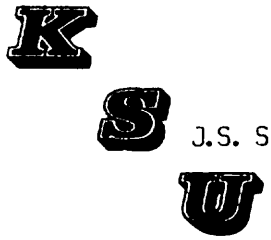

Influence of Supplemental Light on Sow Performance During and After Lactation[1]

J.S. Stevenson, D.S. Pollmann, D.L. Davis and J.P. Murphy

Summary

A study involving 327 crossbred sows was conducted to determine whether providing supplemental light in farrowing rooms would influence litter weight, number of pigs weaned, piglet survival rate, and subsequent rebreeding performance of sows exposed to 16 hr supplemental light/day during lactation. Litter weight was increased 7.7 lbs or .85 lb per pig weaned. More sows exposed to 16 hr light (83%) were mated by 5 days after weaning than were control sows (68%).

Introduction

Lactation is an important phase of sow productivity because adequate milk yield is necessary for optimal piglet survival and growth. Because modern swine production requires prompt rebreeding of sows after weaning, potential carry-over effects of lactational environment on rebreeding performance are also important. Lighting has been shown to increase feed efficiency in growing lambs and milk yield in dairy cows. Sows and their litters exposed to 16 hr light/day had heavier litters and increased piglet survival at weaning (4 wk) compared to sows exposed to 8 hr light/day during lactation. Many confinement farrowing facilities usually provide only minimal lighting except during feeding and care of sows and litters. Although some light is provided by heat lamps or by natural light through windows or wall fans, it is important to determine whether supplemental light offered during lactation can affect sow and litter performance.

Experimental Procedure

This study was conducted at F & R Swine, Dwight, Kansas, in the fall of 1981. Alternate groups of sows were placed in one of five farrowing rooms each week for 10 consecutive weeks and were exposed to either 0 or 16 hr supplemental light during lactation (~ 4 wk). Control rooms (0 hr supplement light/day) were illuminated only during twice daily feedings and at infrequent intervals during early lactation when handling new pigs for iron injections and identification. Treated rooms (16 hr supplemental light/day) were illuminated from 0600 to 2200 hr each day and were controlled by automatic timers. Litter size was equalized within 48 hr after birth. Litters were weighed 1 day before weaning and piglet survival and number of pigs at weaning were recorded. Postweaning interval to mating was monitored for sows retained for breeding.

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[1]We gratefully acknowledge the cooperation of F & R Swine in Dwight, Kansas.

Results and Discussion

Supplemental light increased litter weight but had no effect on pigs weaned nor on survival rate to weaning (table 1). Parity had significant effects on all the litter traits studied. Survival rate and number of pigs weaned declined with advancing parity (table 2). Litters were heavier in second through sixth parity sows than in first-litter gilts. Litter weight was higher for treated than for control sows with the greatest treatment differences in fourth through seventh parities (table 2).

Table 1. Influence of Supplemental Light During Lactation on Litter Performance

Item	Control (0 hr)	Supplemental (16 hr)
No. litters	164	163
No. pigs nursed	10.2	10.0
No. pigs weaned	9.2	9.1
Survival	91	91
Litter wt., lb.	117.7	125.0[a]

[a]Greater than control ($P<.05$).

Table 2. Influence of Parity and Supplemental Light on Litter Performance

Item	Supplemental Light	Parity 1	2	3	4	5	6	7
No. litters	0 hr	40	26	22	12	12	23	18
	16 hr	51	27	27	14	7	12	26
Survival, %	0 hr	100	91	93	85	100	91	76
	16 hr	94	95	94	88	94	87	89
Pigs weaned	0 hr	9.9	9.1	9.4	8.5	10.6	9.3	7.6
	16 hr	9.3	9.5	9.4	8.7	9.3	8.8	8.6
Litter wt., lb.	0 hr	112	128	120	109	118	124	112
	16 hr	110	129	121	129	135	138	122

Supplemental light influenced subsequent mating performance of the sows. Average interval to remating tended to be shorter in treated (5.5 days) than in control sows (5.9 days). More treated sows (83%) than control sows (68%) were remated by 5 days after weaning (table 3). Therefore, light improved the synchrony of the postweaning estrus.

Table 3. Influence of Supplemental Light on Sow Performance

Item	Control (0 hr)	Supplemental (16 hr)
No. sows		
Weaned	164	163
Sold at weaning[a]	18	17
Failed to mate	7	13
Mated	139	133
Days to mating	5.9	5.5[b]
Mated (0-5 days), %	68	83[b]
Total mated, %	95	91

[a]Voluntary culls (not bred).
[b]Greater than control (P<.01).

We concluded that providing supplemental light (16 hr/day) in farrowing rooms for lactating sows increased weight of litters weaned at 4 weeks of age and resulted in more prompt return to estrus after weaning. Supplemental light did not increase survival rate nor the number of pigs weaned.